

12.08.2005

(91)

NEW CLAIMS

1. A conditioning device for moulded plastic items (P) for use in blow mould plants comprising:

- a chain or other continuous conveying device (2) forming a spiral-type path
5 suitable for conveying at least one plastic item (P);

- at least a first thermal conditioning stage comprising at least one duct (6, 7)
through which said at least one plastic item (P) can be conveyed and that is
crossed by a length of said chain or other continuous conveying device (2) and is
suitable for thermally conditioning by heating and/or cooling said at least one
10 plastic item (P);

wherein said chain or other continuous conveying device (P) follows a path
comprising the sections of feeding said at least one plastic item through said first
thermal conditioning stage, of removing said at least one plastic item from said first
heating stage for a predetermined amount of time in order to redistribute the
15 temperature inside said at least one plastic item (P) with a predetermined degree
of uniformity, and of refeeding said at least one plastic item into said first thermal
conditioning stage,

characterised in that said at least one duct (6, 7) is crossed by at least two
sections, of said chain or other continuous conveying device (2), placed side by
20 side, wherein said sections belong each to a different spiral (SP1, SP2, SP3) of
said chain or other continuous conveying device (2).

2. A plant as claimed in claim 1 comprising at least a heating element suitable for
heating by radiation many of said plastic items arranged on at least two sections of
said chain, each belonging to a different spiral (SP1, SP2, SP3) of said chain,
25 when said plastic items (P) pass side by side in at least one of said ducts (6, 7).

3. A plant as claimed in claim 2 wherein said chain or other continuous
conveying device (2) is suitable for feeding said at least one plastic item (P) to be
thermally conditioned through said first and second thermal conditioning stages.

4. A plant as claimed in one or more claims from 3 to 5 wherein said spirals (SP1,
30 SP2, SP3) are substantially placed one inside the other.

5. A plant as claimed in one or more claims from 3 to 6 wherein said chain or other
continuous conveying device (2) forms a closed path.

6. A plant as claimed in claim 7 wherein said chain or other continuous conveying device (2) is articulated in order to be able to bend in the three spatial dimensions and forms essentially a non planar path.

5 7. A plant as claimed in one or more claims from 1 to 6 wherein the at least one plastic item represents a plurality of preforms (P) and said at least two chain sections are equipped with a plurality of fastenings suitable for housing a plurality of preforms (P), and said at least two sections pass side by side through said at least one duct whereby the preforms are arranged in an essentially quincunx layout.

10 8. A plant as claimed in one or more claims from 1 to 7 wherein said first and second stages of thermal conditioning take place in one or more heating furnaces (1) suitable for heating said preforms (P).

15 9. A plant as claimed in one or more claims from 1 to 8 wherein said first and second thermal conditioning stages both take place in cooling stations suitable for cooling said at least one plastic item more than would result from placing said at least one plastic item in the environment outside said first and second conditioning stage.

20 10. A plant as claimed in one or more claims from 1 to 9 comprising a heating furnace where said first and second heating stages both take place in said furnace.

11. A plant as claimed in one or more claims from 1 to 10 comprising a cooling unit and where said first and second thermal conditioning stages both take place in said cooling unit.